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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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STEVEN G. ROEDER  
THE LAW OFFICE OF STEVEN G. ROEDER  
5560 Chelsea Avenue  
La Jolla, CA 92037

EXAMINER

KIM, PETER B

ART UNIT

PAPER NUMBER

2851

DATE MAILED: 01/24/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/779,944

Examiner

Peter B. Kim

Applicant(s)

BINNARD ET AL.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL.
- 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-41 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 8, 9, 11, 16-21, 24-27, 32, 33, 35, 36 and 38-41 is/are rejected.
- 7) ☒ Claim(s) 4-7, 10, 12-15, 22, 23, 28-31, 34 and 37 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 June 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_.

- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

## DETAILED ACTION

### *Drawings*

The drawings are objected to because the description on page 6, lines 20 and 21 and Figure 1 do not seem to correspond to each other. It is not clear which structure is referenced by numbers 48A and 48B. It is not clear why 48B has two components while 48A only has one component. The description of stage mover assembly 16, and drawings representing the stage mover assembly are not clear. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### *Specification*

The disclosure is objected to because of the following informalities: The description of stage mover assembly 16, and drawings representing the stage mover assembly are not clear. According to the written description on page 7, line 17, the guide assembly 46 moves the mover housing along the X axis, but Figure 1 seems to indicate that the guide assembly moves the housing along the Y axis.

Appropriate correction is required.

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international

application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-3, 11, 16-21, 24-27, 32, 33, 35, 36, 38-41 are rejected under 35 U.S.C. 102(e) as being anticipated by Tokuda et al. (Tokuda) (6,493,062).

Tokuda discloses a device stage and a method of making a device stage assembly that moves a device (6) relative to a mounting base (1), the device stage assembly comprising a device stage that retains the device (33), a mover housing (2), a support assembly that moves the device stage relative to the mover housing, the support assembly including at least four, spaced apart Z device stage movers (38) that are connected to the device stage and a control system (30) that controls the X device stage movers to inhibit vibration which causes deformation of the device stage using a feedforward control by monitoring the movement of the stage (col. 13, lines 16-34). Tokuda's invention also inhibit dynamic deformation caused by repulsive force due to step and scan exposure, and the static deformation caused every time wafer and reticle stages move (col. 1, lines 27-36). Tokuda also discloses an exposure apparatus with an irradiation apparatus (Fig. 1 and 2) including the device stage assembly. Tokuda further discloses the device or a wafer manufactured with the exposure apparatus (Fig. 5 and 6). Tokuda also discloses the method of determining a driving force that inhibits deformation and providing the driving force to the stage to cause the movement of the stage (col. 13, lines 16-56).

#### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

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having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 8, 9, rejected under 35 U.S.C. 103(a) as being unpatentable over Tokuda et al. (Tokuda) in view of Yonekawa et al. (Yonekawa) (6,330,052).

Tokuda discloses the claimed invention as discussed above. However, Tokuda does not disclose a sensor for monitoring the bending of the stage. Yonekawa discloses in col. 9, lines 40-45, col. 8, lines 19-24 and col. 11, lines 20-46 a sensor for monitoring the bending of the stage. Because Tokuda discloses using a feedforward control by monitoring the movement of the stage to minimize the deformation of the stages it would have been obvious to one of ordinary skill in the art to provide the bending sensor of Yonekawa to the invention of Tokuda to control the movers to minimize the deformation based on the result of the sensors.

Claims 16, 17, 26, and 27 rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Iwamoto. Iwamoto discloses a device and a wafer which appears to be nearly the same as the device and the wafer claimed (Fig. 8 and 9).

According to MPEP 2113, "the lack of physical description in a product-by-process claim makes determination of the patentability of the claim more difficult, since in spite of the fact that the claim may recite only process limitations, it is the patentability of the product claimed and not of the recited process steps which must be established. Therefore when the prior art discloses a product which reasonably appears to be either identical with or only slightly different than a product claimed in a product-by-process claim, a rejection based alternatively on either section 102 or section 103 of the statute is eminently fair and acceptable. As a practical matter, the Patent Office is not equipped to manufacture products by the myriad of processes put before

it and then obtain prior art products and make physical comparisons therewith." In re Brown, 459 F.2d 531, 535, 173 USPQ 685, 688 (CCPA 1972).

***Allowable Subject Matter***

Claims 4-7, 10, 12-15, 22, 23, 28-31, 34, and 37 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.


None of the prior art of record teaches or discloses a stage assembly that moves a device relative to a mounting base comprising a device stage, a mover housing, a support assembly with four Z device stage movers and a control system that controls the Z device to inhibit deformation wherein the Z device stage movers are used to adjust the position of the stage, and move the stage about a X axis and a Y axis, including a stage mover assembly connected to the mover housing which moves the mover housing; An exposure apparatus with the device stage assembly comprising a stage base that supports the mover housing and a base support assembly that moves the stage base relative to the mounting base, and a base support assembly including four Z base movers or an apparatus frame that supports a portion of the device stage assembly above the mounting base and a frame support assembly including four spaced apart Z frame movers.

None of the prior art of record teaches or discloses a method for making a device stage assembly with steps of providing a device stage; a mover, connecting a support assembly and connecting a controller with the plurality of spaced apart Z device stage movers wherein the Z device stage movers adjust the position of the device stage about a X axis and a Y axis or connecting to X and Y device stage mover which move the device stage about a Z axis.

*Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter Kim whose telephone number is (703) 305-0105. The examiner can normally be reached on Monday-Thursday from 6:30 AM to 4:00 PM. The examiner can also be reached on alternate Fridays during the same hours.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Russ Adams, can be reached on (703) 308-2847. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0956.



Peter B. Kim  
Patent Examiner  
January 17, 2003